Erin De Pree, Ph.D. | Data Scientist and Physicist

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Skills

- *Programming Languages:* Python (Pandas, NumPy, Scikit-Learn), TensorFlow, Keras, PyTorch, SQL, Mathematica, LaTeX, Google Colab, Jupyter Lab, Hugging Face, C++
- *Machine Learning (ML)/Artificial Intelligence (AI):* Linear regression, regularization, gradient descent, logistic regression, tree-based learning (random forest, gradient boosted trees), convolutional neural networks, natural language processing, data mining, data cleaning, feature engineering, exploratory data analysis
- *Data Visualization:* Maplotlib, Seaborn, Plotly, Dash
- *Physics/Math:* Quantum physics, computational physics, partial differential equations and their evolution in time, linear algebra, group theory, abstract algebra, statistics

Professional Experience

BATES COLLEGE, Lewiston, Maine — August 2022 – May 2025

Visiting Associate Professor of Physics

- Supported faculty during high turnover, taught a range of courses from introductory physics to quantum mechanics, and mentored students and new faculty through one-on-one discussions and group discussions
- Astrometry of Double Stars: used SQL and Mathematica to model possible orbits of nearby stars. *(*http://www.jdso.org/volume20/number4/DePree_503_510.pdf)

ST. MARY'S COLLEGE OF MARYLAND, St. Mary's City, Maryland — August 2008 – July 2022

Associate Professor of Physics

Chair of the Physics Department, 2020 – 2021

- Led departmental initiatives, developed courses, and implemented programs to improve student success and research participation
- Transformed the quantum mechanics curriculum using a spins-first approach, turning a confusing math course into an engaging growth opportunity that empowered students to master difficult concepts and mathematically complex problems
- Created a 10-part career program resulting in an increase of student research participation from 60% to 95%
- Improved learning environment by developing an in-class inclusion and anti-bullying workshop, dramatically increased graduation rates among underrepresented groups in physics
- Developed a semester-long computer programming course to solve a range of physics problems
- Mentored 30 research students resulting in over ten conference presentations
- Modeled and analyzed an alumni database for networking impacts, allowing for data-backed decisions in curricular decisions. Proved the number of physics majors doubled after I was hired.

Certifications

Informs, Certified Analytics Professional (CAP) – Pro Certification — December 2025

- https://bcert.me/sqbkucekz

General Assembly, Data Science Bootcamp — September 2025

- Intensive 12-week program building end-to-end, product-focused data science projects.
- Developed 92% accurate classifier for spam job ads via a gradient boosted tree model with vectorization.
- Built a convolutional neural network with 38,000+ trainable parameters and exponential learning rate decay, achieving 90%+ accuracy, precision, recall, and F1-score to classify images of human kidneys.

Coursera, Google Advanced Data Analytics — Expected February 2026

Education

Doctor of Philosophy (Ph.D.), Physics — William and Mary, Williamsburg, VA
Master of Science (M.S.), Physics — William and Mary, Williamsburg, VA
Bachelor of Science (B.S.), Physics and Mathematics majors — Hillsdale College, Hillsdale, MI